Career Fact Sheet

Chemical Engineer

Related Job Titles:

Organic chemist, polymer chemist, thermodynamicist, fluid dynamicist, materials engineer

Job Description:

Chemical **engineers** use **chemistry**, **engineering** and **physics** to develop chemical products such as propulsion gases. When designing a new product, **engineers** first figure out what it needs to do. They then design and test the product. They also write reports on the product. Most **engineers** work in office buildings or laboratories. Some must travel to different work sites.

Interests / Abilities:

- Are you good at math?
- Are you creative?
- Is your work detailed?
- Do you like to solve problems?
- Are you interested in how things work?
- Do you like working with computers?
- Are you good at working with a team?

Suggested School Subjects / Courses:

- Mathematics (**algebra**, **geometry**, **trigonometry**, **pre-calculus**, **calculus**)
- Science (**physics**, **biology**, **chemistry**)
- **Engineering** (**thermodynamics**, **fluid mechanics**)
- Computer programming
- Social studies (history)
- English (writing)

Education / Training Needed:

The minimum education required for this position is a **bachelor's degree** in chemical **engineering** or a related subject from an accredited **college** or **university**. To do research, a **Ph.D.** is highly desired for this position.

Areas of Expertise:

- ***Manufacturing***: design and update machines such as airplanes, robots, cars, etc.
- ***Fluids***: design and build fluid flow systems or processes such as pipes
- ***Biomedical***: design and develop instruments, such as a heart pump, for medical use
- ***Systems***: design and analyze mechanical or heating systems

Additional Resources:

- NASA Jobs
  http://nasajobs.nasa.gov
- Junior Engineering Technical Society
  http://www.asee.org/jets
- Accreditation Board for Engineering and Technology, Inc.
  http://www.abet.org
- American Chemical Society
  http://www.acs.org
- American Institute of Chemical Engineers
  http://www.aiche.org
- Chemical Engineers' Resource Page
  http://www.cheresources.com/indexzz.shtml
- History of Chemical Engineering & Chemical Technology
  http://www3.cems.umn.edu/~aiche_ug/history/h_intro.html

What can I do right now?

- Take as many math and science classes as you can.
- Participate in National Engineers Week.
- Participate in science fair projects.
- Visit Astro-Venture regularly to participate in chats and activities.
- Call the American Association of Science and Technology Centers for information on science museums in your area that you might visit. (202) 783-7200
- Order activity books, poster sets and **engineering** kits by writing to the Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, MI 48121-0930.